

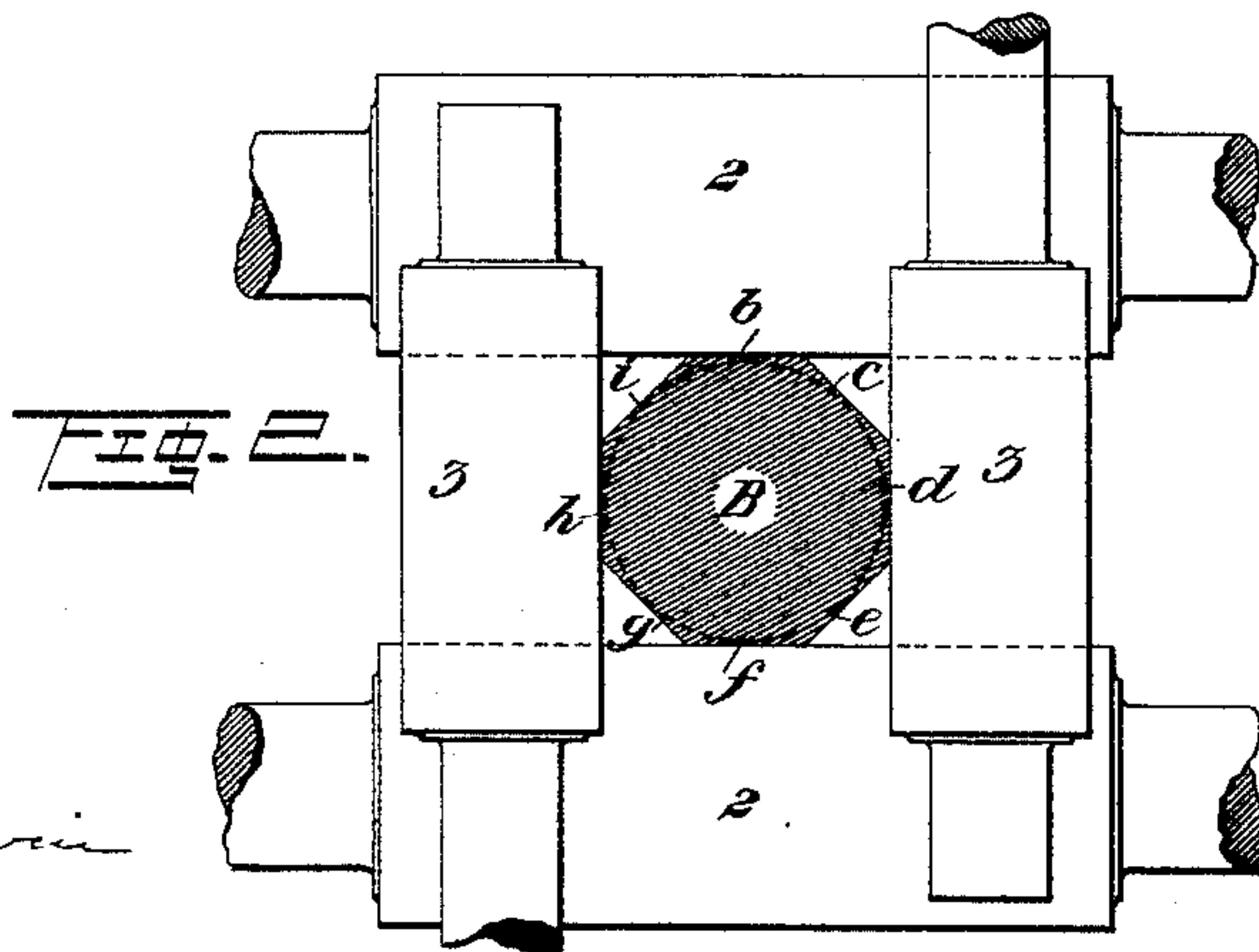
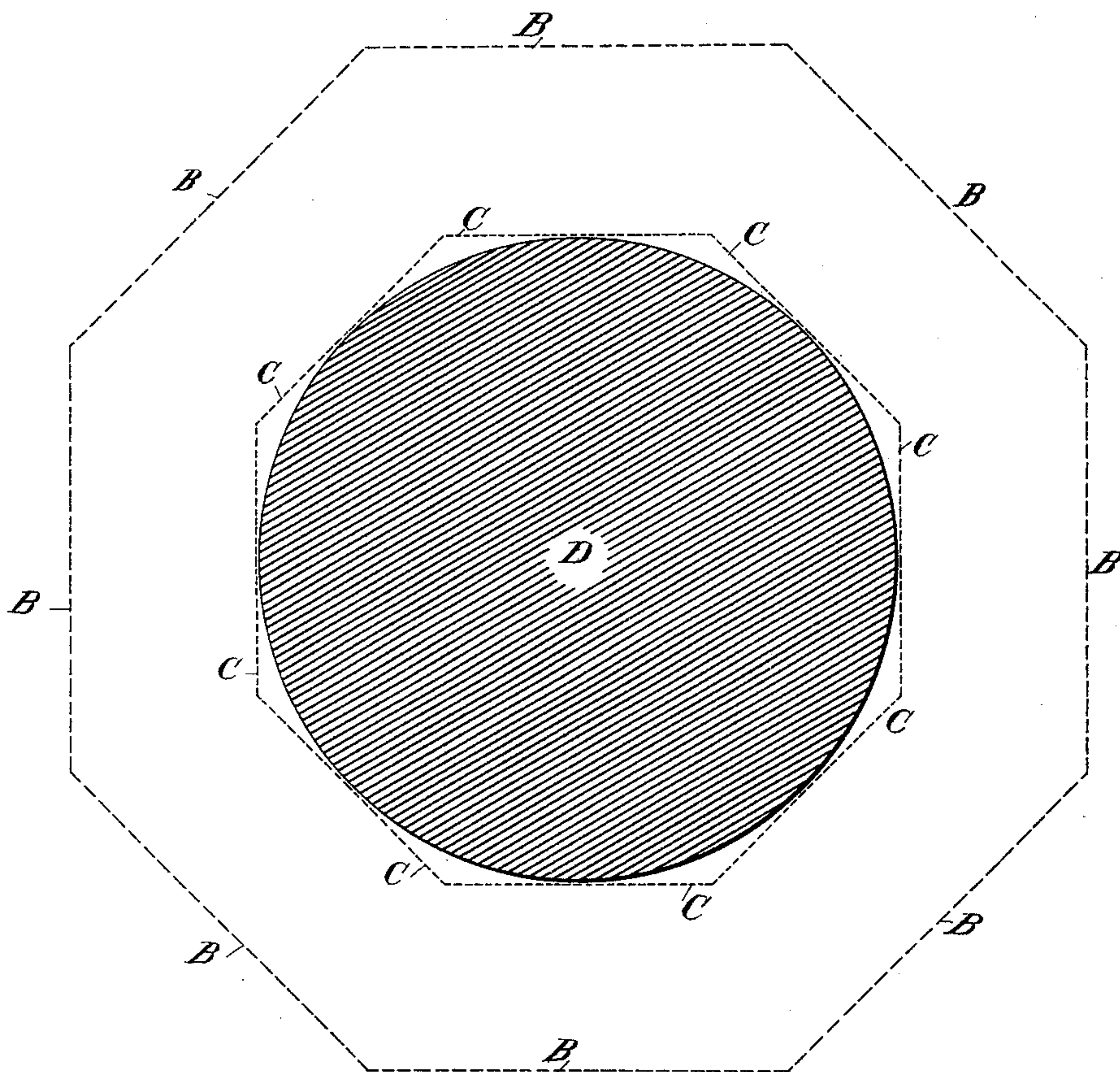
(No Model.)

C. M. SCHWAB.
MAKING METAL ROLLS.

No. 410,651.

Patented Sept. 10, 1889.

FIG. 7.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES M. SCHWAB, OF MUNHALL, PENNSYLVANIA.

MAKING METAL ROLLS.

SPECIFICATION forming part of Letters Patent No. 410,651, dated September 10, 1889.

Application filed February 11, 1889. Serial No. 299,469. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. SCHWAB, of Munhall, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Rolls, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a diagram view illustrating my invention. Fig. 2 is a front view of rolls, illustrating the mode in which I produce the bloom or blank from which the roll is turned.

Like symbols of reference indicate like parts in each.

The object of my invention is to produce steel rolls of greater strength and homogeneity of composition than is possible in the manufacture of rolls by the methods heretofore employed.

25 In practicing my invention I cast an ingot of steel, (preferably open-hearth steel,) and preferably octagonal in shape, and of diameter considerably greater than that of the roll to be made, but of less length, and then, by means of a universal mill, I roll this ingot down to about the diameter desired for the roll, still preserving the octagonal shape. The bloom thus rolled is then put in a lathe, and is reduced by turning to the cylindrical shape required for the finished roll, the proper collars and grooves, if any, being formed thereon at the same time. By rolling a bloom of octagonal shape I not only save much

waste of metal in cutting in approximating 35 the cylindrical form of the roll, but I am enabled to roll the article in a universal mill and to produce thereby rolls of very great size and strength. Thus in the accompanying drawings, Fig. 1, the dotted lines B represent the 40 outline of the octagonal ingot as it is cast; C, the bloom reduced by rolling from the ingot, as before explained, and D the roll which is cut from the bloom C.

Fig. 2 illustrates the mode of rolling the 45 ingot, 2 2 and 3 3 being the rolls of a universal mill, and B the ingot in the process of reduction therein. In rolling the ingot it is subjected to alternate reductions on the sides *b d f h* and *c e g i*, and is thus brought to the 50 desired size, preserving, however, the original cross-sectional shape.

I claim—

The method herein described for making rolls, which consists in casting an ingot of 55 octagonal shape, reducing the same to a bloom of octagonal cross-section by subjecting the ingot to a simultaneous vertical and lateral rolling pressure, and finally turning the bloom into cylindrical form, substantially as and for 60 the purposes described.

In testimony whereof I have hereunto set my hand this 8th day of February, A. D. 1889.

CHARLES M. SCHWAB.

Witnesses:

W. H. CORBETT,

H. L. KIRKWOOD.